EXAMPLE PROCEDURE FOR COLLECTING SOURCE WATER SAMPLES FOR *E. COLI* ANALYSES

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DRAFT

Example Procedure for Collecting Source Water Samples for *E. coli* Analyses

1.0 Required Materials

Check to make sure the following materials are available before collecting sample:

- ☐ Several pairs of new, powder-free latex gloves (Lab Safety Supply, cat. number 16285XL, or equivalent)
- ☐ Sterile, non-toxic, glass or plastic container with a leak-proof lid. Container should be capable of holding 120-mL or 250-mL with ample headspace to facilitate mixing of sample by shaking prior to analysis (Nalgene polypropylene wide-mouth bottles, cat. number, 21050008, or equivalent)
- ☐ Sample number label
- ☐ Turbidimeter

The following additional materials will be needed if the sample will be shipped off-site for analysis:

- ☐ Sample collection form
- ☐ Plastic sample bags (1 gallon) (Ziplock, or equivalent)
- ☐ Cooler, approximately 9-quart (Coleman, cat. number, 6209-703, or equivalent)
- ☐ Two large plastic trash bags
- ☐ One 8-lb. bag of ice or Gel ice packs (VWR, cat. number, 15715-105, or equivalent)
- ☐ Strapping tape
- ☐ Two, self-adhesive plastic airbill sleeves
- ☐ Airbill for shipment

2.0 Collecting the Sample

2.1 Record the sample number, sample location, samplers name, observations, and sampling date and time in a sampling log book if the sample will be analyzed on-site.

If the sample will be shipped off-site, record the following information on the sample collection form:

- O Public water system (PWS) name
- O PWS address
- O Sampler name
- O Sample ID (optional)
- O Public Water System Identification (PWSID) number
- O Public Water System facility ID number
- O Facility name

- Sample collection point ID
- Sample collection point name
- Sample collection date
- Source water type
- Requested analysis (circle "*E. coli*")

2.2 Water taps used for sampling should be free of aerators, strainers, hose attachments, mixing type faucets, and purification devices. The service line should be cleared before sampling by maintaining a steady water flow for at least two minutes (until the water changes temperature). Please note: Pre-rinsing the sample containers with sample is prohibited when collecting *E. coli* samples.

2.3 Adjust the flow of water out of the tap or hose so the water will not splash out when it is collected into the sample container.

2.4 If there is not an inline tap that allows for the sampling of source water prior to treatment, samples should be collected as close to the intake as possible from either land or boat. Source water samples should be collected close to the surface using a grab sampling technique. Samples may be collected manually by direct submersion of the bottle into the water or by using a grab sampling device, as simple as a metal pole with an adjustable clamp at one end that holds the sampling bottle in place.

2.4 Measure the turbidity of the source water. Record the following on the sample collection form:

- Turbidity measurement, in NTU

2.5 Using aseptic technique (i.e., sanitize tap, do not touch the inside of the sample container, etc.), fill the *E. coli* sample container, leaving at least 1 inch of head space. Do not expose an opened container any longer than necessary. Record the system name, sampler's name, sample number, date and time of sample collection, sample location, and analysis requested on the sample container.

2.6 Immediately following sample collection, tighten the sample container lid. If the sample will be shipped off-site for analysis, and will not be shipped for several hours, place the sample container upright in a refrigerator to maintain the sample at a temperature of less than 10°C, but not freezing, prior to shipment. If a refrigerator is not available, wrap the sample with insulation such as bubble wrap or paper towels (to prevent freezing), place the sample in a ziplock bag, and place the bag containing the sample in the shipping cooler with wet ice or ice packs. Replace with fresh ice or ice packs immediately prior to shipment.

3.0 Packing the Sample (Applicable to Samples Shipped Off-Site for Analysis)

3.1 Insert two large plastic trash bags into the shipping cooler to create a double liner. Immediately before packing the cooler, disperse 6 pounds of ice into 3 to 4 plastic, ziplock bags. Gel packs or blue ice may be used in lieu of wet ice, as long as the sample is maintained in the appropriate temperature range. Seal the ziplock bags, expelling as much air as possible, and secure top with tape.

Note! Shipping companies may delay sample shipments if leakage occurs. Double liners and ziplock bags around ice will prevent leakage and delays.

3.2 Place the bag containing the samples into the shipping container. Place the ice or ice packs around, but not on, the sample bag to prevent freezing.

3.3 If you will be monitoring sample temperature during shipment, place in the cooler the temperature monitoring device (e.g., extra sample bottle for measuring sample temperature upon receipt at the laboratory, thermometer vial, or Thermochron™ iButton). Seal each liner bag by twisting top of bag and tying in a knot

3.4 Peel the backing off one of the plastic airbill sleeves and attach the sleeve to the inside of the cooler lid.

- Sign and date the sample collection form.

Fold the completed sample collection form, and place it inside the plastic sleeve.

3.5 Close the cooler lid, seal the horizontal joints with duct tape, and secure the lid with tape by taping the cooler at each end, perpendicular to the seal.

Note! Shipping companies may delay sample shipments if leakage occurs. Be sure to seal the cooler joints.

3.6 Peel the backing off of the second airbill sleeve and attach the sleeve to the outside of the cooler lid. Complete the shipping airbill with the laboratory address, billing information, sample weight, and shipping service. Remove the shipper's copy of the airbill, and place the remainder of the airbill inside the plastic sleeve.

4.0 Shipping and Tracking

4.1 Ship samples on the day of collection and use a reliable shipping service for next-day delivery.

4.2 Contact the laboratory to notify them of the sample shipment. Request that the laboratory contact you the next day if the sample is not received.

4.3 Using the airbill number on the shipper's copy of the airbill, track the sample shipment using the shipping company's web page or by contacting the shipping company over the phone.

4.4 If problems are encountered with the shipment, communicate with the shipping company to resolve, and update the laboratory regarding the status of the shipment.